

t1\_ncfcont2  
(TMdquLDNc4x4qqBuRq1TB5i66AS69D4fqrU)

October 27, 2020

Let  $v2\_struct\_0 : \iota \Rightarrow o$  be given. Let  $v13\_algstr\_0 : \iota \Rightarrow o$  be given. Let  $v2\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_rlvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $v4\_normsp\_0 : \iota \Rightarrow o$  be given. Let  $v2\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v3\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v4\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v5\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v8\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $l2\_clvect\_1 : \iota \Rightarrow o$  be given. Let  $v1\_funct\_1 : \iota \Rightarrow o$  be given. Let  $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_zfmisc\_1 : \iota \Rightarrow \iota$  be given. Let  $k2\_zfmisc\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $u1\_struct\_0 : \iota \Rightarrow \iota$  be given. Let  $r1\_ncfcont2 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $r1\_tarski : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k1\_relset\_1 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k1\_numbers : \iota$  be given. Let  $r1\_xxreal\_0 : \iota \Rightarrow \iota \Rightarrow o$  be given. Let  $k6\_numbers : \iota$  be given. Let  $k1\_normsp\_0 : \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k5\_algstr\_0 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Let  $k7\_partfun1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$  be given. Assume the following.

$$\forall X0. \forall X1. \forall X2. ((r1\_tarski X0 X1) \wedge (r1\_tarski X1 X2)) \Rightarrow (r1\_tarski X0 X2) \quad (1)$$

Assume the following.

$$\forall X0. \forall X1. (r1\_tarski X0 X1) \Leftrightarrow (\forall X2. (X2 \in X0) \Rightarrow (X2 \in X1)) \quad (2)$$

Assume the following.

$$\begin{aligned}
& \forall X0.\forall X1.((\neg v2\_struct\_0 X1)\wedge((v13\_algstr\_0 X1)\wedge \\
& ((v2\_rlvect\_1 X1)\wedge((v3\_rlvect\_1 X1)\wedge((v4\_rlvect\_1 X1)\wedge((v3\_normsp\_0 \\
& X1)\wedge((v4\_normsp\_0 X1)\wedge((v2\_clvect\_1 X1)\wedge((v3\_clvect\_1 X1)\wedge \\
& ((v4\_clvect\_1 X1)\wedge((v5\_clvect\_1 X1)\wedge((v8\_clvect\_1 X1)\wedge(l2\_clvect\_1 \\
& X1))))))))))\Rightarrow(\forall X2.((\neg v2\_struct\_0 X2)\wedge((v13\_algstr\_0 \\
& X2)\wedge((v2\_rlvect\_1 X2)\wedge((v3\_rlvect\_1 X2)\wedge((v4\_rlvect\_1 X2)\wedge \\
& ((v3\_normsp\_0 X2)\wedge((v4\_normsp\_0 X2)\wedge((v2\_clvect\_1 X2)\wedge((v3\_clvect\_1 \\
& X2)\wedge((v4\_clvect\_1 X2)\wedge((v5\_clvect\_1 X2)\wedge((v8\_clvect\_1 X2)\wedge \\
& (l2\_clvect\_1 X2))))))))))\Rightarrow(\forall X3.((v1\_funct\_1 X3)\wedge \\
& (m1\_subset\_1 X3 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X1) (u1\_struct\_0 \\
& X2))))\Rightarrow((r1\_ncfcont2 X0 X1 X2 X3)\Leftrightarrow((r1\_tarski X0 (k1\_relset\_1 \\
& (u1\_struct\_0 X1) X3))\wedge(\forall X4.(m1\_subset\_1 X4 k1\_numbers)\Rightarrow \\
& (\neg(\neg r1\_xxreal\_0 X4 k6\_numbers)\wedge(\forall X5.(m1\_subset\_1 X5 k1\_numbers)\Rightarrow \\
& (\neg(\neg r1\_xxreal\_0 X5 k6\_numbers)\wedge(\forall X6.(m1\_subset\_1 X6 ( \\
& u1\_struct\_0 X1)\Rightarrow(\forall X7.(m1\_subset\_1 X7 (u1\_struct\_0 X1)\Rightarrow \\
& (\neg(X6 \in X0)\wedge((X7 \in X0)\wedge(\neg r1\_xxreal\_0 X5 (k1\_normsp\_0 X1 (k5\_algstr\_0 \\
& X1 X6 X7)))\wedge(r1\_xxreal\_0 X4 (k1\_normsp\_0 X2 (k5\_algstr\_0 X2 (k7\_partfun1 \\
& (u1\_struct\_0 X2) X3 X6) (k7\_partfun1 (u1\_struct\_0 X2) X3 X7)))))))))))))) \\
& \tag{3}
\end{aligned}$$

**Theorem 1**

$$\begin{aligned}
& \forall X0.\forall X1.\forall X2.((\neg v2\_struct\_0 X2)\wedge((v13\_algstr\_0 \\
& X2)\wedge((v2\_rlvect\_1 X2)\wedge((v3\_rlvect\_1 X2)\wedge((v4\_rlvect\_1 X2)\wedge \\
& ((v3\_normsp\_0 X2)\wedge((v4\_normsp\_0 X2)\wedge((v2\_clvect\_1 X2)\wedge((v3\_clvect\_1 \\
& X2)\wedge((v4\_clvect\_1 X2)\wedge((v5\_clvect\_1 X2)\wedge((v8\_clvect\_1 X2)\wedge \\
& (l2\_clvect\_1 X2))))))))))\Rightarrow(\forall X3.((\neg v2\_struct\_0 X3)\wedge \\
& ((v13\_algstr\_0 X3)\wedge((v2\_rlvect\_1 X3)\wedge((v3\_rlvect\_1 X3)\wedge((v4\_rlvect\_1 \\
& X3)\wedge((v3\_normsp\_0 X3)\wedge((v4\_normsp\_0 X3)\wedge((v2\_clvect\_1 X3)\wedge \\
& ((v3\_clvect\_1 X3)\wedge((v4\_clvect\_1 X3)\wedge((v5\_clvect\_1 X3)\wedge((v8\_clvect\_1 \\
& X3)\wedge(l2\_clvect\_1 X3))))))))))\Rightarrow(\forall X4.((v1\_funct\_1 \\
& X4)\wedge(m1\_subset\_1 X4 (k1\_zfmisc\_1 (k2\_zfmisc\_1 (u1\_struct\_0 X2) \\
& (u1\_struct\_0 X3))))\Rightarrow(((r1\_ncfcont2 X0 X2 X3 X4)\wedge(r1\_tarski X1 \\
& X0)\Rightarrow(r1\_ncfcont2 X1 X2 X3 X4)))
\end{aligned}$$